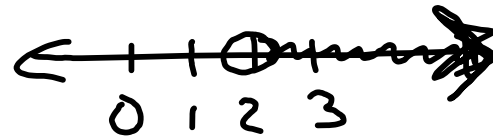


Jan. 29, 2018

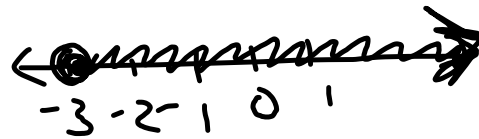
Sect. 3-3

Solving Linear Inequalities
Interval Notation
Solving

Interval Notation (Shaded Part)



$$(2, \infty)$$



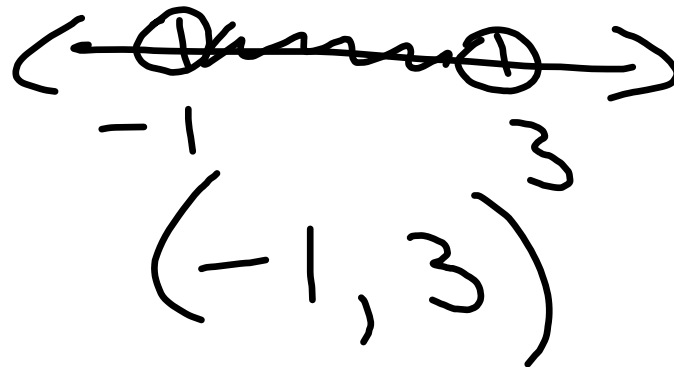
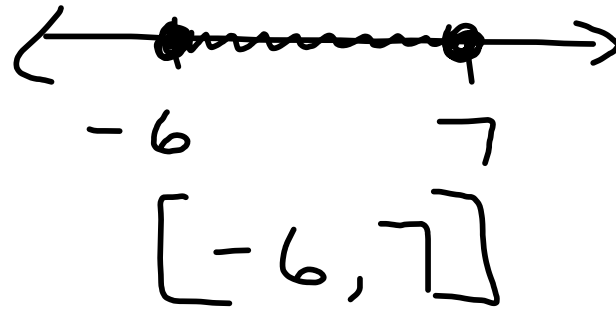
$$[-3, \infty)$$




$$(-\infty, 5]$$




$$[-3, 2)$$



$$\begin{array}{r}
 x + 1 < 2 \\
 -1 \quad -1 \\
 \hline
 x < 1
 \end{array}$$



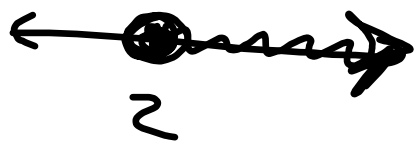


open circ. $\left\{ \begin{array}{l} < \\ > \end{array} \right.$ less than
 greater than

closed circ. $\left\{ \begin{array}{l} \leq \\ \geq \end{array} \right.$

Solve $2x + 6 \geq 10$

$$\begin{array}{r} 2x + 6 \geq 10 \\ -6 \qquad -6 \\ \hline 2x \geq 4 \\ x \geq 2 \end{array}$$

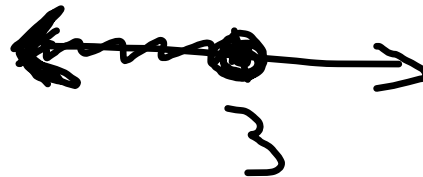


$$[2, \infty)$$

$$3x - 1 \leq 8$$

$$3x \leq 9$$

$$x \leq 3$$



$$(-\infty, 3]$$

$$\begin{array}{r}
 -2x > 8 \\
 \hline
 -2 \\
 \hline
 x < -4 \\
 \leftarrow \oplus \\
 -4 \\
 (-\infty, -4)
 \end{array}$$

$$\begin{array}{r}
 2x > -8 \\
 \hline
 2 \\
 \hline
 x > -4 \\
 \leftarrow \oplus \\
 -4 \\
 (-4, \infty)
 \end{array}$$

$$\text{Solve: } 4x - 2 > -7(4x - 2)$$

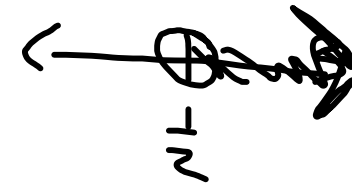
$$4x - 2 > -28x + 14$$

$$\begin{array}{r} +28x \\ \hline 32x - 2 > 14 \end{array}$$

$$\begin{array}{r} 32x - 2 > 14 \\ +2 \quad +2 \\ \hline 32x > 16 \end{array}$$

$$\frac{32x}{32} > \frac{16}{32}$$

$$x > \frac{1}{2}$$



$$\left(\frac{1}{2}, \infty \right)$$

$$\frac{2x-3}{5} \geq \frac{x+1}{3}$$

Do NOT
cross mult.

$$15 \left(\frac{2x-3}{5} \right) \geq \left(\frac{x+1}{3} \right) 15$$

$$3(2x-3) \geq 5(x+1)$$

$$6x-9 \geq 5x+5$$

$$x \geq 14$$



$$[14, \infty)$$